

WHAT IS CLAIMED IS:

1. An organic electroluminescent device,
comprising:

an anode;

5 a cathode; and

a polymer luminescent layer disposed between the
anode and the cathode, and comprising a host molecule
and a luminescent dye molecule, the host molecule being
formed of a π -electron conjugated polymer having
10 carbon-fluorine bond, the luminescent dye molecule
being capable of receiving energy from the host
molecule both in an excited singlet state and in
an excited triplet state.

2. An organic electroluminescent device,
15 comprising:

an anode;

a cathode; and

a polymer luminescent layer disposed between the
anode and the cathode, and comprising a host molecule
20 and a luminescent dye molecule, the host molecule being
formed of a π -electron conjugated polymer having a
carbon-fluorine bond, at least one type of luminescent
dye molecule being selected from the group consisting
of a transition metal complex and a linear π -electron
25 conjugated molecule.

3. The device according to claim 2, wherein the
host molecule is formed of a π -electron conjugated

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polymer having a fluorine atom bonded to a carbon atom in a π -electron conjugated system or a carbon atom adjacent to the carbon atom in the π -electron conjugated system.

5 4. The device according to claim 3, wherein the carbon atom in the π -electron conjugated system has a conjugated carbon atom or is an aromatic carbon atom.

10 5. The device according to claim 2, wherein the host molecule is formed of a π -electron conjugated polymer comprising a phenylene skeleton or a fluorene skeleton in the polymer main chain.

6. The device according to claim 2, wherein the dye molecule emits phosphorescence.

15 7. The device according to claim 2, wherein the dye molecule is a rare earth metal complex.

8. The device according to claim 2, wherein the polymer luminescent layer comprises the host molecule doped with about 0.01 to 5 wt% of the luminescent dye molecule.

20 9. The device according to claim 2, wherein a hole transport layer is disposed between the anode and the polymer luminescent layer.

25 10. The device according to claim 2, wherein an electron transport layer or buffer layer is disposed between the cathode and the polymer luminescent layer.

11. A display apparatus comprising,
pixels arranged in a two-dimensional array,

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each pixel including multiple types of organic electroluminescent devices different in emission color, each organic electroluminescent device comprising an anode, a cathode, and a polymer luminescent layer disposed between the anode and the cathode;

wherein the polymer luminescent layer of at least one type of organic EL device comprises a host molecule and a luminescent dye molecule, the host molecule being formed of a π -electron conjugated polymer having a carbon-fluorine bond, at least one type of luminescent dye molecule being selected from the group consisting of a transition metal complex and a linear π -electron conjugated molecule.

12. The display apparatus according to claim 11, wherein the host molecule is formed of a π -electron conjugated polymer having a fluorine atom bonded to a carbon atom in a π -electron conjugated system or a carbon atom adjacent to the carbon atom in the π -electron conjugated system.

13. The display apparatus according to claim 12, wherein the carbon atom in the π -electron conjugated system has a conjugated carbon atom or is an aromatic carbon atom.

14. The display apparatus according to claim 11, wherein the host molecule is formed of a π -electron conjugated polymer comprising a phenylene skeleton or a fluorene skeleton in the polymer main chain.

15. The display apparatus according to claim 11,
wherein the dye molecule emits phosphorescence.

16. The display apparatus according to claim 11,
wherein the dye molecule is a rare earth metal complex.

5 17. The display apparatus according to claim 11,
wherein the polymer luminescent layer comprises the
host molecule doped with about 0.01 to 5 wt% of the
luminescent dye molecule.

10 18. The display apparatus according to claim 11,
wherein a hole transport layer is disposed between the
anode and the polymer luminescent layer.

15 19. The display apparatus according to claim 11,
wherein an electron transport layer or buffer layer
is disposed between the cathode and the polymer
luminescent layer.

20 20. The display apparatus according to claim 11,
wherein the organic electroluminescent device
comprising the polymer luminescent layer comprising
a host molecule formed of a π -electron conjugated
polymer having a carbon-fluorine bond and at least one
type of luminescent dye molecule selected from the
group consisting of a transition metal complex and
a linear π -electron conjugated molecule is at least
a blue-emitting organic electroluminescent device.

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